

## STORAGE STAND

## 2 BACKGROUND OF THE INVENTION

### 3 1. Field of the Invention

4 The present invention relates to a storage stand, and more particularly  
5 to a storage stand that is cheap to make.

## 6 2. Description of Related Art

With reference to Figs 4 and 5, a conventional storage stand (40) has multiple shelves (42) and vertical supports (41).

9            Each shelf (42) is rectangular and has four corners (not numbered)  
10          and four tubular sleeves (43). Each corner has an arcuate edge (420). Each  
11          tubular sleeve (43) has an inside diameter is welded in one of the arcuate edges  
12          (420) with two welds (431).

13            Each vertical support (41) is tubular and has a diameter, an upper end  
14            (not numbered) and a lower end (not numbered). The diameter of the vertical  
15            support (41) is slightly smaller than the diameter of the tubular sleeve (43)  
16            attached to each corner of the shelf (42). The vertical supports (41) are  
17            mounted respectively in the tubular sleeves (43) attached to the shelf (42) and  
18            between adjacent shelves (42).

19 The conventional storage stand (40) has the following disadvantages.

20           1. The welds (431) attaching the tubular sleeves (43) to the shelves (42)  
21       are not easily made smooth, which will detract from the outer appearance.

22            2. For the manufacturer to smooth the welds (431) will an additional  
23 procedure and more time and money to perform the procedure.

**24** The present invention provides a storage stand to mitigate or obviate

1 the aforementioned problem.

2 **SUMMARY OF THE INVENTION**

3 The primary objective of the present invention is to provide a storage  
4 stand with an aesthetic appearance that can be made with a simple process.

5 A storage stand in accordance with the present invention has multiple  
6 shelves, split tubular sleeves, brackets and vertical supports. Each shelf has  
7 multiple corners, and each bracket is mounted in one of the corners under the  
8 shelves to hold one of the split tubular sleeves. The vertical supports are  
9 mounted between adjacent shelves. The storage stand has an aesthetic  
10 appearance and can be easily assembled.

11 Other objectives, advantages and novel features of the invention will  
12 become more apparent from the following detailed description when taken in  
13 conjunction with the accompanying drawings.

14 **BRIEF DESCRIPTION OF THE DRAWINGS**

15 Fig. 1 is a perspective view of a corner of shelf of a storage stand in  
16 accordance with the present invention;

17 Fig. 2 is an exploded perspective bottom view of the corner of the shelf  
18 of the storage stand in Fig. 1;

19 Fig. 3 is a perspective bottom view of corner of the shelf of the storage  
20 stand in Fig. 2;

21 Fig. 4 is a perspective view of a conventional storage stand in  
22 accordance with the prior art; and

23 Fig. 5 is a perspective view of a corner of a shelf of the conventional  
24 storage stand in Fig. 4.

1    **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

2              With reference to Figs. 1 to 3, a storage stand in accordance with the  
3    present invention has multiple shelves (10), split tubular sleeves (20), brackets  
4    (30) and vertical supports (not shown).

5              Each shelf (10) has a bottom surface (not numbered), a top surface (not  
6    numbered) with at least three edges (not numbered), and a corresponding  
7    number of corners (not numbered), through holes (13), vertical edges (11) and  
8    bottom lips (12). The most common embodiment of the storage stand has  
9    shelves (10) with four edges, four through holes and four corners. The vertical  
10   edges (11) have an upper edge (not numbered) and a lower edge (not  
11   numbered), and the upper edges are integrally formed with the edges of the top  
12   surface. The bottom lips (12) are integrally formed with lower edges of the  
13   vertical edges (11). The through holes (13) are defined through the top surface  
14   respectively near the corners, and a corresponding arcuate edges (14) are  
15   formed in the bottom lips (12) respectively at the corners.

16             The brackets (30) are attached to the bottom surface of the shelf (10)  
17   and hold respectively the split tubular sleeves (20). Each bracket (30)  
18   corresponds to one of the corners and has a top piece (31), two vertical braces  
19   (32) and two tabs (33). The top piece (31) is trapezoidal with two non-parallel  
20   ends (not numbered). The two vertical braces (32) are formed respectively with  
21   the non-parallel ends. When a shelf (10) has four corners, the vertical braces  
22   (32) in each bracket (30) are formed at a 90° angle relative to each other. For a  
23   shelf (10) with three corners, the vertical braces (32) in each bracket (30) are  
24   formed at a 120° angle relative to each other. The tabs (33) are integrally

1 formed with the vertical braces (32) and extend out 90° from the vertical braces  
2 (32). The top piece (31) further has a curved edge (not numbered)  
3 corresponding to the through hole (13).

4       Each split tubular sleeve (20) has an outside surface (not numbered)  
5 and is mounted inside one of the through holes (13) and the corresponding  
6 arcuate edge (14) in the bottom lips (12). A bracket (30) is inserted between the  
7 bottom lips (12) and the bottom surface of the shelf (10) so that the curved edge  
8 of the top piece (31) abuts the split tubular sleeve (20). The bracket (30) is then  
9 spot welded to the split tubular sleeve (20) and the bottom lips (12) to securely  
10 hold the split tubular sleeve (20) in place. The vertical supports support each  
11 shelf (10) and has two ends. The ends of the vertical support are inserted  
12 respectively into corresponding split tubular sleeves (20) of adjacent shelves  
13 (10).

14       Because the welds are hidden under the shelf (10), the welds will not  
15 detract from the outer appearance, and no need exists to grind the welds.  
16 Consequently no further procedure is required, and the storage stand can be  
17 produced in a short time.

18       Even though numerous characteristics and advantages of the present  
19 invention have been set forth in the foregoing description, together with details  
20 of the structure and function of the invention, that the disclosure is illustrative  
21 only, and changes may be made in detail, especially in matters of shape, size,  
22 and arrangement of parts within the principles of the invention to the full extent  
23 indicated by the broad general meaning of the terms in which the appended  
24 claims are expressed is to be understood.

1   **WHAT IS CLAIMED IS:**

2       1. A storage stand having

3           multiple shelves each having

4               a bottom surface;

5               a top surface with at least three edges;

6               multiple corners and each formed between two of the at least

7       three edges;

8               multiple through holes defined through the top surface and

9       each through hole being near one of the corners;

10               vertical edges each integrally formed with one of the edges of

11       the top surface; and

12               bottom lips integrally formed with each vertical edge and

13       having arcuate edges corresponding to the through holes;

14               multiple split tubular sleeves and each split tubular sleeve mounted

15       inside one of the through holes and a corresponding one of the arcuate edges;

16               multiple brackets mounted between the bottom surface of the shelf and

17       the bottom lips to hold the split tubular sleeves and each having

18               a top piece with a curved edge to abut and be welded to the

19       split tubular sleeve and two non-parallel ends;

20               two vertical braces integrally formed respectively with the

21       non-parallel ends of the top piece; and

22               two tabs integrally formed respectively with and extending

23       out from the vertical braces and welded to the bottom lips between which the

24       split tubular sleeve is mounted; and

- 1       multiple vertical supports mounted between adjacent shelves and
  - 2       each vertical support having one end inserted into two of the split tubular
  - 3       sleeves.
- 4           2. The storage stand as claimed in claim 1, wherein the vertical braces
  - 5       are oriented at 90° with regard to each other when each shelf has four corners.
- 6           3. The storage stand as claimed in claim 1, wherein the vertical braces
  - 7       are oriented at 120° with regard to each other when each shelf has three
  - 8       corners.